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10/734,440	12/11/2003	Hemanth Sampath	MP0389/13361-061001	4615
26200 7590 06/06/2008 FISH & RICHARDSON P.C. P.O BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER HOM, SHICK C	
			ART UNIT	PAPER NUMBER
			2616	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/734,440	<b>Applicant(s)</b> SAMPATH ET AL.	
	<b>Examiner</b> SHICK C. HOM	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-76 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-27, 30-45, 48-63 and 66-76 is/are rejected.
- 7) ☒ Claim(s) 10-11, 28-29, 46-47, 64-65 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/10/08 has been entered.

***Response to Arguments***

2. Applicant's arguments with respect to claims 1-76 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 16-23, 34-41, 52-59, and 70-72 are rejected under 35 U.S.C. 102(b) as being anticipated by Mahany et al. (5,483,676).

Regarding claim 1, 19, 37, and 55:

Mahany et al. disclose a method comprising: determining a received signal quality value from received packets transmitted at a first data rate (col. 22 lines 11-22 recite transmitting a test signal to determine the quality of the radio link by analyzing the received signal strength measurement to decide on a dynamic basis whether a higher data transmission rate is feasible; and the abstract specifically recite the test signal being transmitted at a low data rate clearly anticipate the transmitted signal at the first data rate; further Figs. 13-16 and col. 4 lines 27-40 recite that the digital data transmitted being type of communications frame clearly anticipate receiving and transmitting data packets);

determining a packet loss indicator value from transmitted packets transmitted at a second data rate (col. 25 lines 44-58 recite transmitting a high data rate poll and evaluating the

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occurrence of bit errors in the decoding, i.e. packet loss indicator, in order to use a lower rate clearly anticipate transmitting packets at a second data rate, i.e. the high data rate); and

selecting a third different data rate in response to the received signal quality value and the packet loss indicator value (col. 2 lines 35-57 recite the communications equipment being able to switch between two or more data rates in response to the test and selection signals to the rate which has been determined to be the optimum rate, which may be neither the low or high rate, clearly anticipate the third different data rate). Regarding claims 2, 20, 38, and 56:

Mahany et al. disclose wherein the received signal quality value is selected from an RSSI (Received Signal Strength Indicator) value, an SNR (signal to noise ratio) value, an SINR (signal to interference noise ratio) value, and a SQM (signal quality measure) value, the SQM value comprising a mean of the SNRs across all of a plurality of tones (col. 21 lines 1-7 recite signal quality being based on the received signal strength indicator).

Regarding claims 3, 21, 39, and 57:

Mahany et al. disclose wherein the data loss indicator value is selected from a retry counter value, a bit-error update

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value, a data error update value, a symbol error update value, and a CRC (Cyclic Redundancy Check) indicator value (col. 17 lines 5-13 recite the comparing the total number of error against a threshold value to make data rate decision; col. 19 line 7-17 recite using bit error rate BER; and col. 28 line 62 to col. 29 line 5 recite the use of Cyclic Redundancy Check). Regarding claims 4, 40, and 58:

Mahany et al. disclose wherein said selecting comprises selecting the third different data rate from a plurality of available data rates (col. 2 lines 35-57 recite switching between two or more data rates).

Regarding claims 5, 23, 41, and 59:

Mahany et al. disclose wherein generating a confidence value for each of a plurality available data rates using the received signal quality value and the packet loss indicator value (col. 16 lines 4-9 recite the selection of data rate being based upon average value of signal strength, and col. 17 lines 5-13 recite selection of data rate being based on error percentage above a threshold level, e.g. any error above twenty-one percent or sixty errors out of two hundred eighty samples the 9600 baud rate would not be used and the 4800 baud rate would be used, clearly anticipate generating the confidence value for each of a plurality available data rates since a

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confidence value is merely the range of values within which the true value is assured to lie).

Regarding claims 16, 18, 34, 36, 52, 54, 70, and 72:

Mahany et al. disclose decreasing the selected data rate in response to the packet loss indicator value increasing as in claims 16, 34, 52, 70; and selecting a fourth data rate value directly from the packet loss indicator value in response to the received signal quality value falling below a minimum signal quality value as in claims 18, 36, 54, 72 (col. 17 lines 5-13 recite comparing number of errors against threshold for selecting the 9600 baud operation and if error is above this level the 4800 baud operation is used; and col. 2 lines 35-57 recite switching between two or more data rates clearly anticipate the fourth data rate value).

Regarding claims 17, 22, 35, 53, and 71:

Mahany et al. disclose wherein said decreasing comprises decreasing the selected data rate in response to data rate values in a table indexed by available data rates and packet loss indicator values as in claims 17, 35, 53, 71 (col. 25 lines 59-67 recite the use of a stored table for adjusting the rate and col. 15 lines 11-21 recite the data rate being programmable under software control clearly reads on the use of a table as claimed).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 6-9, 12-15, 24-27, 30-33, 42-45, 48-51, 60-63, 66-69, and 73-76 are rejected under 35 U.S.C. 103(a) as being



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unpatentable over Mahany et al. (5,483,676) in view of Yavuz et al. (7,075,913).

For claims 6-9, 12-15, 24-27, 30-33, 42-45, 48-51, 60-63, 66-69, and 73-76, Mahany et al. disclose the apparatus, computer-readable medium, and method described in paragraph 3 of this office action.

Mahany et al. disclose all the subject matter of the claimed invention with the exception of wherein the received signal quality value comprises an received signal strength indicator RSSI value; wherein said generating the confidence value comprises solving an equation; updating the adjustment value in response to the packet loss indicator value indicating a maximum failure value corresponding to an excessive number of failed packet transmissions; and updating the adjustment value in response to the packet loss indicator value indicating a maximum success value corresponding to an excessive number of success packet transmissions as in claims 6-9, 12-13, 24-27, 30-32, 42-45, 48-49, 60-63, 66-67; increasing a transmit power for transmitting packets in response to the selected data rate falling below a first data rate; and decreasing the transmit power in response to the selected data rate exceeding a second data rate as in claims 14, 32, 50, 68; wherein the second data

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rate is greater than the first data rate as in claims 15, 33, 51, 69; and wherein the transmitted packets and received packets comply with one of the IEEE 802.11 family of specifications as in claims 73-76.

Yavuz et al. from the same or similar fields of endeavor teach that it is known to provide wherein said generating the confidence value comprises solving an equation; updating the adjustment value in response to the packet loss indicator value indicating a maximum failure value corresponding to an excessive number of failed packet transmissions; and updating the adjustment value in response to the packet loss indicator value indicating a maximum success value corresponding to an excessive number of success packet transmissions (Col. 5 lines 16-29 recite the signal quality being related to the transmit power clearly reads on the quality value comprising an RSSI value as claimed); increasing a transmit power for transmitting packets in response to the selected data rate falling below a first data rate; and decreasing the transmit power in response to the selected data rate exceeding a second data rate; wherein the second data rate is greater than the first data rate (col. 2 lines 5-19 recite the relationship between power and rate, i.e. higher transmit power is needed to support higher rate); and wherein the transmitted packets and received packets comply with

one of the IEEE 802.11 family of specifications (col. 1 line 62 to col. 2 line 4 recite the use of a plurality of operating standards clearly anticipate one of the IEEE 802.11 family of specifications as claimed).

Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to provide wherein the received signal quality value comprises an received signal strength indicator RSSI value; wherein said generating the confidence value comprises solving an equation; wherein said selecting the data rate comprises selecting a data rate associated with a positive confidence value; wherein said selecting the data rate comprises selecting a data rate associated with a lowest positive confidence value; updating the adjustment value in response to the packet loss indicator value indicating a maximum failure value corresponding to an excessive number of failed packet transmissions; and updating the adjustment value in response to the packet loss indicator value indicating a maximum success value corresponding to an excessive number of success packet transmissions; increasing a transmit power for transmitting packets in response to the selected data rate falling below a first data rate; and decreasing the transmit power in response to the selected data rate exceeding a second data rate; wherein the second data rate is greater than

the first data rate; and wherein the transmitted packets and received packets comply with one of the IEEE 802.11 family of specifications as taught by Yavuz et al. in the communications network of Mahany et al.

The received signal quality value comprising an received signal strength indicator RSSI value; wherein said generating the confidence value comprises solving an equation; updating the adjustment value in response to the packet loss indicator value indicating a maximum failure value corresponding to an excessive number of failed packet transmissions; and updating the adjustment value in response to the packet loss indicator value indicating a maximum success value corresponding to an excessive number of success packet transmissions; increasing a transmit power for transmitting packets in response to the selected data rate falling below a first data rate; and decreasing the transmit power in response to the selected data rate exceeding a second data rate; wherein the second data rate is greater than the first data rate; and wherein the transmitted packets and received packets comply with one of the IEEE 802.11 family of specifications can be implemented by connecting the packet data network including the received signal quality value comprises an received signal strength indicator RSSI value; wherein said generating the confidence value comprises solving an equation;

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wherein said selecting the data rate comprises selecting a data rate associated with a positive confidence value; wherein said selecting the data rate comprises selecting a data rate associated with a lowest positive confidence value; updating the adjustment value in response to the packet loss indicator value indicating a maximum failure value corresponding to an excessive number of failed packet transmissions; and updating the adjustment value in response to the packet loss indicator value indicating a maximum success value corresponding to an excessive number of success packet transmissions; increasing a transmit power for transmitting packets in response to the selected data rate falling below a first data rate; and decreasing the transmit power in response to the selected data rate exceeding a second data rate; wherein the second data rate is greater than the first data rate; and wherein the transmitted packets and received packets comply with one of the IEEE 802.11 family of specifications of Yavuz et al. to the network of Mahany et al.

The motivation for providing the received signal quality value comprising an received signal strength indicator RSSI value; wherein said generating the confidence value comprises solving an equation; updating the adjustment value in response to the packet loss indicator value indicating a maximum failure value corresponding to an excessive number of failed packet

transmissions; and updating the adjustment value in response to the packet loss indicator value indicating a maximum success value corresponding to an excessive number of success packet transmissions; increasing a transmit power for transmitting packets in response to the selected data rate falling below a first data rate; and decreasing the transmit power in response to the selected data rate exceeding a second data rate; wherein the second data rate is greater than the first data rate; and wherein the transmitted packets and received packets comply with one of the IEEE 802.11 family of specifications as taught by Yavuz et al. in the mobile communication system and method of Mahany et al. being that it provides more efficiency for the system since the system uses a standard family of specifications for transmitting and receiving packets.

***Allowable Subject Matter***

7. Claims 10-11, 28-29, 46-47, and 64-65 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Miet discloses a transceiver for selecting a source coder based on signal distortion estimate.

Kim et al. disclose a method for optimizing UDMA transfer signal using CRC errors.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHICK C. HOM whose telephone number is (571)272-3173. The examiner can normally be reached on Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pham Chi can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chi H Pham/  
Supervisory Patent  
Examiner, Art Unit 2616  
6/4/08

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